Using Plan Quality Metrics for Maintenance of Certification

Quantifying Improvement in Treatment Plan Quality Subsequent to Training within a Radiation Oncology Department
Purpose of Talk

- Discuss PQI and the PDSA Process
  - Plan
  - Do
  - Study
  - Act

- Discuss how this project affected our Practice
  - Physicians
  - Physicists
  - Dosimetrists
Plan

- Identify an area judged to be in need of improvement
  - Physician Issues
    - Unhappy with quality of plans and process for evaluating plans
      - “If we are going to state that we are giving the best quality of care in the community, we have to do it, and we have to prove it. You haven’t been able to provide me with that level of confidence since I got here. What are you going to do about it?”
    - “I’m not comfortable utilizing IMRT for lung treatments because I’m not comfortable with the treatment planning process nor are my dosimetrists. I also have difficulty evaluating the plans. I’m not sure what I should be looking at. What are you going to do about it?”

- Identified Areas
  - Desired treatment plan objectives not being achieved
  - No set process to evaluate plans

- Devise a method to assess the degree of need
Plan

- Assess the Lung IMRT planning skill of dosimetrists
  - Hired Radiation Oncology Resources to evaluate and train dosimetrists
  - Measure quality of plans prior to training and post training
- Assess utilization of IMRT compared to other facilities across our Network
  - Collected Data across USON for utilization comparison
- Set Goal of 10% Improvement in measurable objectives
- Set goal of 10% increase in IMRT utilization for the Practice
Do

Set Plan in Motion and Collect Data

- Hire Radiation Oncology Resources to evaluate and train planners
- 3-Day Training Session with Radiation Oncology Resources
  - Provide training to planners, physicians and physicists
  - Provide improved methods for planning and evaluating IMRT plans using practice treatment planning system
  - Provide training using Quality Reports to evaluate and improve treatment plans
- Physician participation in USON IMRT Workshops
- Physicist and Dosimetrist participation in USON IMRT Workshops
- Dosimetrist participation in USON Pilot Program-EPIQ-Dosimetry
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Study

Determine how well your measure compares to desired goal.
Quantify Improvement in Quality of Planning

- Plans prior to training were evaluated using Quality Reports
- Plans replanned using techniques taught by Radiation Oncology Resources during 3-Day training session and IMRT Workshops
- Post plans re-evaluated
- Median score increased to 97.6 from 65.3
- Overall improvement: 66.9%—Well above stated goal of 10%
Study

Determine how well your measure compares to desired goal. Quantify Improvement in Utilization

- Data collected to compare use of IMRT prior to training to post training.
- All treatment areas showed marked increase in utilization across the USON Network.
- Network Utilization of IMRT went from 29.8% to 37.1%.
- Our practice’s utilization of IMRT went from 17.1% to 28.3%. Well above stated goal of 10%. 

![IMRT Utilization - All Diseases](chart.png)
Address root causes of failure to achieve desired goal

Begin another cycle: Plan-Do-Study-Act and assess any gain achieved

Use cycle continuously or intermittently to document stability of goals and/or the need to improve

Evaluate all IMRT Treatment Plans using Quality Reports
  - Evaluate results and determine if plan can be improved upon

Participate in EPIQ-Dosimetry Training Program

Collect data to determine if using Quality Reports within a Radiation Oncology Department to evaluate all IMRT treatment plans will increase quality of plans.
What are the four required steps to a Maintenance of Certification PQI Project?

- A. Plan, Do, Study, Act
- B. Question, Plan, Study, Act
- C. Plan, Study, Act, Follow-Up
- D. Collect, Plan, Study, Act
- E. Plan, Train, Act, Collect